

OTHER LICENSE TERMINATION RULE ISSUES AND PLANNED EVALUATIONS

1. RELATIONSHIP BETWEEN THE LICENSE TERMINATION RULE (LTR) RELEASE LIMITS AND OTHER RELEASE LIMITS

1.1 Relationship between LTR and the Unimportant Quantities Limit in 10 CFR 40.13(a) (**Staff Requirements Memorandum (SRM) directed**).

1.1.1 Issue Description and Eventual Desired Outcome

Issue: There is a potential inconsistency between the dose allowed by the LTR and the dose if 10 CFR 40.13(a) were used, and the appropriate relationship between the two regulations is not clear. The staff identified the potential inconsistency in SECY-01-0194 and argued that 10 CFR 40.13(a) is not an appropriate decommissioning criterion. The Commission approved the staff's proposal to deny the use of 10 CFR 40.13(a) as a decommissioning criterion.

Eventual desired outcome: Describe a clear relationship, or resolve/eliminate the inconsistency between the LTR and 10 CFR 40.13(a).

1.1.2. Planned Evaluations

In an August 13, 2002, memorandum to the Commission, the staff discussed its evaluations and considerations of a potential recommendation to limit the U.S. Nuclear Regulatory Commission's (NRC's) regulatory authority to uranium and thorium that are purposely extracted or used. The staff is still analyzing how to implement this, but one approach may include eliminating 10 CFR 40.13(a). This approach, if approved by the Commission, would eliminate the existing inconsistency with the LTR.

The staff has recently published language in the "Statement of Considerations," to the proposed rule changes to 10 CFR 40.51, that serves to clarify NRC's intent concerning the relationship of these provisions. It indicates that 10 CFR 40.13(a) is not a disposal standard, that on-site disposal of mixtures of material containing less than 0.05 percent by weight source material is not addressed by 40.13(a), and that any on-site disposal would require approval under 10 CFR 20.2002, with reevaluation under the LTR (i.e., 10 CFR 40.13(a) is not applicable as a decommissioning standard).

Planned 10 CFR Part 40 Jurisdictional Working Group evaluations from the August 13, 2002, memorandum, that are also needed before the staff makes its recommendation to the Commission on that issue include:

- 1) Evaluate how to implement this approach logistically, including a change to NRC's legislative authority or reinterpretation of the Atomic Energy Act via rulemaking;

- 2) Evaluate impact on currently licensed and Site Decommissioning Management Plan sites that will no longer be under NRC jurisdiction;
- 3) Evaluate impacts on international treaties; coordinate with State Department; and
- 4) Evaluate approach's consistency with ongoing NRC security initiatives.

1.2 Relationship between LTR and On-Site Disposal under 10 CFR 20.2002 (SRM directed)

1.2.1 Issue Description and Eventual Desired Outcome

Issue: 10 CFR 20.2002 does not establish a clear standard for approving on-site burials, but allows Agency discretion to approve, on a case-by-case basis, as long as the action remains within the public dose limit of 1mSv/yr (100 mrem/yr). However, it appears clear, from the LTR "Statement of Considerations," that on-site disposals, under 10 CFR 20.2002, were to be reconsidered under the LTR at the time of license termination. In addition, the requirements of the Timeliness Rule in 10 CFR 30.36, 40.42, and 70.38 apply to on-site burials and warrant assessment. This suggests that the LTR constraint of 0.25 mSv/yr (25 mrem/yr) and as low as reasonably achievable (ALARA), for unrestricted release, should be used for approval of on-site burials during operation. Similarly, the same constraint should be used for offsite disposals, under 10 CFR 20.2002.

Eventual desired outcome: Clarify the appropriate standard to use for approving on-site burials.

1.2.2 Planned Evaluations

- 1) Evaluate current practice for approving on-site burials and current practice for applying the Timeliness Rule (10 CFR 30.36, 40.42, and 70.38) to on-site burials.
- 2) Evaluate appropriate options for standards to be used for approvals of on-site burials, including evaluating potential impacts on future license termination with restricted release.

1.3 Appropriateness of Developing an Alternative Unrestricted Release Standard for Uranium and Thorium (SRM directed)

1.3.1 Issue Description and Eventual Desired Outcome

Issue: The appropriateness of regulating uranium and thorium differently than other radionuclides (specifically, with respect to developing a separate unrestricted release standard) should be considered given that: 1) uranium and thorium are ubiquitous in nature and cause varying degrees of radiation exposure to humans as a result; and 2) the unrestricted release standard in the LTR is different than

other NRC regulations dealing with remediation of uranium and thorium (10 CFR Part 40, Appendix A); State and Federal regulations of technologically enhanced naturally occurring radioactive material (TENORM), and international standards of the International Commission on Radiological Protection (ICRP), which are based on concentrations.

Eventual desired outcome: Decide whether it is appropriate to develop a separate (from the LTR) unrestricted release criteria (either concentration or dose-based) for uranium and thorium, or describe a clear relationship to other standards.

1.3.2 Planned Evaluations

- 1) Evaluate available insights and existing and planned regulations from national and international groups for unrestricted release criteria for naturally occurring radioactive material and TENORM (e.g., ICRP, Conference of Radiation Control Program Directors, Inc. (CRCPD), and EPA).
- 2) Evaluate other NRC regulations for remediation of uranium and thorium (e.g., Part 40, Appendix A).
- 3) Based on above evaluations, identify and characterize potential inconsistencies between the LTR and internal and external regulations for unrestricted release for uranium and thorium.
- 4) Evaluate impacts of potential inconsistencies on safety, public confidence, unnecessary regulatory burden (including number of sites affected and potential for fewer restricted release sites), and staff efficiencies.
- 5) Based on results of evaluations, determine appropriateness of developing an alternate unrestricted release standard.
- 6) If the staff determines that an alternate standard is appropriate, identify and evaluate options to implement this change, such as a concentration standard like 10 CFR Part 40, Appendix A, or a dose standard [greater than 0.25 mSv/yr (25 mrem/yr)] using the 10 CFR 20.1404 alternate criteria standard under the LTR.

1.4 Relationship between the LTR and Control of Solid Materials (Staff initiated)

1.4.1 Issue Description and Eventual Desired Outcome

Issue: The relationship is unclear between the LTR's dose constraint of 0.25 mSv/yr (25 mrem/yr) and ALARA for unrestricted release of a site, and existing guidance for controlling solid materials on a case-by-case basis, particularly for instances where residual contamination might be removed from an unrestricted release site after license termination.

Eventual desired outcome: Describe the relationship between the LTR's unrestricted release dose constraint and the existing case-by-case approach for controlling solid materials.

1.4.2 Planned Evaluations

1) Prepare an explanation of the relationship, including:

a) Differences in types of contamination, potential future uses, and exposure pathways between the LTR unrestricted release and control of solid materials under current guidelines; and

b) Discussion of factors, such as ALARA and effects of mixing and dilution, that realistically would reduce the dose if residual contamination were removed from an unrestricted use site after the license is terminated.

2. REALISTIC EXPOSURE SCENARIOS (STAFF INITIATED)

2.1 Issue and Desired Outcome

Issue: Clear direction and guidance are needed for selecting more realistic exposure scenarios for both unrestricted release and restricted release that appropriately considers IC effectiveness and radiological risk.

Eventual desired outcome: Implement dose assessment exposure scenarios and modeling assumptions that are risk-informed, realistic, and that reflect a logical extension of existing site-specific conditions for the foreseeable future. Specifically, identify what justifications are adequate to use scenarios other than the generic screening scenario of a resident farmer, in light of the 1000-year dose modeling time period.

2.2 Planned Evaluations

1) Evaluate approaches and assumptions used by others (e.g., U.S. Environmental Protection Agency; U.S. Department of Energy; American Society for Testing and Materials; CRCPD) to select scenarios.

2) Evaluate underlying assumptions used as the basis for identifying what land use is foreseeable to justify realistic scenarios, such as: 1) assuming continuity of existing society rather than catastrophic collapse of society; 2) assuming a logical extension of existing land use of a site and surrounding area; and 3) assuming when existing site conditions that are not likely to change would limit future scenarios (e.g., wetlands).

3) Evaluate when assuming continued industrial use would be acceptable.

4) Evaluate the consequences of changes to scenario selection on potential restricted release sites.

3. MEASURES TO PREVENT FUTURE LEGACY SITES (STAFF INITIATED)

3.1 Financial Assurance/Bankruptcy

3.1.1 Issue Description and Eventual Desired Outcome

Issue: Staff experience has resulted in identifying the following financial assurance risks:

- 1) Initial underestimation of costs;
- 2) Increased costs after certain events (e.g., groundwater contamination);
- 3) Unavailability of funds in bankruptcy;
- 4) Inadequate financial disclosure; and
- 5) Corporate reorganization.

Eventual desired outcome: Minimize the potential for future legacy sites by reviewing and revising financial assurance requirements and guidance, as necessary, to ensure adequate decommissioning funding is available for licensees.

3.1.2 Planned Evaluations

- 1) For each of the financial assurance risks identified in section 3.1.1, identify and evaluate potential changes to requirements or guidance and make recommendations.

3.2 Potential Regulatory Changes to Licensee Operations

3.2.1 Issue Descriptions and Desired Outcomes

Issue: A number of legacy sites have substantial contamination including subsurface soil and groundwater contamination. These sites were operating long before the current decommissioning regulatory infrastructure existed. While much has been done to prevent such future sites, could more be done through rulemaking, guidance development, or in changes to existing operating licensees?

Eventual desired outcome: Make regulatory changes, as necessary, to minimize the potential for legacy sites.

3.2.2 Planned Evaluations

- 1) Identify events or factors that have or could lead to future legacy sites.
- 2) Identify existing regulatory tools (e.g., requirements, guidance, inspections, enforcement, etc.) and their effectiveness for addressing the events and factors identified above in order to reduce the potential for future legacy sites (e.g., cleanup of spills during operations or periodic offsite disposal of waste to limit accumulation of large volumes of onsite waste).

3) Identify, evaluate, and recommend potential changes to regulatory tools, if needed, to adequately address the events and factors identified above.